

**BARRIER FILM WITH ORGALLOY:
ALREADY USED FOR METHYL BROMIDE, ALSO EFFICIENT WITH
ALTERNATIVES**

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ORGALLOY® is an engineering polyamide alloy resin produced by Elf Atochem, a Chemical Branch of the Elf Company.

This material is easy to extrude into film on conventional PE machinery.

1. ORGALLOY FILM : Has a low permeability to Methyl Bromide :

- Orgalloy film has a very low permeability to Methyl Bromide. It is a much better barrier than PE (table 1).

Material	Thickness of film (μm)	Permeability to MB ($\text{g}/\text{m}^2.\text{h}$)	Permeability to MB ($\text{g}.50\mu\text{m}/\text{m}^2.\text{h}$)
ORGALLOY®	51.9	0.00187 *	0.0019
PE	40	63.36 *	50.69

Table 1: Permeability of polyethylen and Orgalloy films to MeBr at 20°C. Evaluated by L.N.P.V. (Laboratoire National de Protection des Végétaux) - Cenon - France.

- Orgalloy film has already been used for fumigation with MeBr and gives good results.

Field tests performed by LNPV (Laboratoire de Protection des Végétaux) have shown that the use of an Orgalloy film allows a dosage reduction of Methyl Bromide of up to 50% while keeping the same efficiency of treatment.

The measurement of the C.T (concentration of MeBr in the soil x time of application) explains such a result (table 2).

Type	CT (g.h.m ⁻³)
PE-70-15 cm	4170
PE-70-25 cm	4481
BA-35-15 cm	5410
BA-35-25 cm	5434

Table 2 : Product Concentration x Time (CT in g.h/m³ of Methyl Bromide) obtained at 15 and 25 cm deep during 147 hours of treatment with the hot Methyl Bromide technique. Comparison between Polyethylen films (PE) and Orgalloy barrier films (BA) with doses of 70 g/m² and 35 g/m² of Methyl Bromide. Evaluated by L.N.P.V - June 1997 - CIREF Douville France.

ORGALLOY FILM : can be used with alternative treatments :

- Orgalloy is also a very good barrier to alternatives for Methyl Bromide such as MITC or Chloropicrin.

A test performed by Doctor Tanaka of KITASATO University in Japan shows the difference of permeability to MITC and Chloropicrin with an Orgalloy film compared to a PE film (fig 1 and 2).

Fig.1 : Permeability to MITC (Methyl Iso Thio Cyanate) of polyethylen and multilayer Orgalloy films. Evaluated by Dr TANAKA - Kitasato University - Kanagawa - Japan.

Fig.2 : Permeability to Chloropicrin of polyethylen and multilayer Orgalloy films. Evaluated by Dr TANAKA - Kitasato University - Kanagawa - Japan.

The preplant treatment for cultivation of ginger has been done in the cooperative JA Shinto of the Kochi Prefecture in using MITC generators (Carbam and Dazomet) and films covering the soil. The first observations have shown the same result against weeds with PE film and full dosage as with Orgalloy film and reduced dosage (about half dosage).

Conclusion :

In conclusion we can say that the use of barrier made film with Orgalloy is not only useful to face the reduction of Methyl Bromide for preplant treatments, but is also a way to improve the efficiency of the treatment with alternatives and thus can reduce the doses for the same efficiency.

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